

[6450-01-P]

DEPARTMENT OF ENERGY

Revision to the Record of Decision for the Department of Energy's Waste Management Program

AGENCY: Department of Energy

ACTION: Revision to record of decision

SUMMARY: The Department of Energy (DOE), pursuant to 10 CFR 1021.315, is revising the *Record of Decision for the Department of Energy's Waste Management Program: Treatment and Storage of Transuranic Waste*, issued on January 20, 1998 (63 Fed. Reg. 3629) and revised previously on December 29, 2000 (65 Fed. Reg. 82985) and July 13, 2001 (66 Fed. Reg. 38646). On September 6, 2002 (67 Fed. Reg. 56989) and June 30, 2004 (69 Fed. Reg. 39446) the Department decided to send the waste from Battelle Columbus Laboratory West Jefferson site to the Hanford Site. The Department has now decided to transfer approximately 37 cubic meters of transuranic (TRU) waste generated as part of the cleanup of the Battelle Columbus Laboratory West Jefferson site near Columbus, Ohio, to the Savannah River Site (SRS) and/or the Waste Control Specialists (WCS) site near Andrews, Texas for either characterization or storage until the waste can be disposed of at the Waste Isolation Pilot Plant (WIPP) in New Mexico. Both SRS and WCS offer viable storage options for the Battelle TRU waste. Pursuant to this decision, DOE may ship all of the Battelle TRU waste to either SRS or WCS, or it may choose to ship a portion of the waste to SRS and the remainder of the waste to WCS.

The Remote-Handled (RH) TRU waste (approximately 25 cubic meters, including about 3 cubic meters of mixed TRU waste [containing both radioactive and hazardous components]) would be

stored at SRS or WCS for up to five years. The CH-TRU waste (approximately 12 cubic meters, including about 2 cubic meters of mixed TRU waste) would be characterized at SRS under the existing characterization program and shipped to WIPP for disposal or stored at WCS for up to five years. If DOE's request for modification of the WIPP hazardous waste facility permit currently pending before the New Mexico Environment Department is granted without substantial change, DOE may be able to ship the Battelle West Jefferson TRU waste from SRS or WCS to WIPP near Carlsbad, NM for disposal, without additional characterization. If additional characterization is necessary prior to disposal at WIPP, the Battelle West Jefferson TRU waste may be shipped from SRS or WCS to another DOE site for characterization.

DOE has prepared a Supplement Analysis (SA) in accordance with DOE NEPA regulations (10 CFR 1021.314) to determine whether the proposed off-site shipment of the Battelle West Jefferson TRU waste for storage at SRS or WCS prior to disposal at WIPP is a substantial change to the proposal or whether there are significant new circumstances or information relevant to environmental concerns such that a supplement to the WM PEIS or a new EIS would be needed. Based on the SA, DOE has determined that a supplement to the WM PEIS or a new EIS is not needed.

FOR FURTHER INFORMATION CONTACT: Copies of the *Waste Management Programmatic Environmental Impact Statement* (WM PEIS), the 1998 WM PEIS ROD for TRU waste, the revised WM PEIS RODs for TRU waste, this revised ROD, and the *Supplement Analysis for Transportation, Storage, Characterization, and Disposal of Transuranic Waste Currently Stored at the Battelle West Jefferson Site near Columbus, Ohio*

(DOE/EIS-0200-SA-02) will be available on DOE's National Environmental Policy Act (NEPA)

Web Site at: <http://www.eh.doe.gov/nepa> under DOE NEPA Documents. To request copies of any of these documents, please write or call:

The Center for Environmental Management Information

P.O. Box 23769

Washington, DC 20026-3769

Telephone: 1-800-736-3282 (in Washington, DC: 202-863-5084)

For further information regarding the storage, characterization, and disposal of Battelle West Jefferson TRU waste, or to obtain copies of the Supplement Analysis discussed herein, contact:

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SUPPLEMENTARY INFORMATION:

I. Background

TRU waste is waste that contains alpha particle-emitting radionuclides with atomic numbers greater than that of uranium (92) and half-lives greater than 20 years in concentrations greater than 100 nanocuries per gram. TRU waste is classified according to the radiation dose at a package surface. CH-TRU waste has a radiation dose rate at a package surface of 200 millirem per hour or less; this waste can safely be handled directly by personnel. RH-TRU waste has a radiation dose rate at a package surface greater than 200 millirem per hour, and must be handled remotely (*e.g.*, with machinery designed to shield workers from radiation). Mixed TRU waste contains both radioactive and hazardous components.

The 37 cubic meters of TRU waste at the Battelle West Jefferson site consist of approximately 12 cubic meters of CH-TRU waste and approximately 25 cubic meters of RH-TRU waste. At the Battelle West Jefferson site, most of the CH-TRU waste is stored in six standard waste boxes in three concrete shielding units. One additional 30 gallon drum of possible CH-TRU waste (this waste was originally thought to be low-level waste, but may eventually be determined to be TRU waste due to the presence of americium) is stored in a locked cargo container at the Battelle site. The RH-TRU waste is contained in 110 55-gallon drums (stored in 11 concrete shielding units) and two RH-TRU 72-B shipping casks (the two shipping casks hold a total of five drums).

In the WM PEIS, DOE analyzed the potential environmental impacts of the management (treatment and storage) of TRU waste at DOE sites (DOE estimated that 580 cubic meters of RH-TRU waste had been generated and was being stored at the Battelle West Jefferson site but did not specifically analyze the treatment or storage of that TRU waste at off-site locations). In the 1998 WM PEIS ROD for TRU waste, DOE decided that "each of the Department's sites that currently has or will generate TRU waste will prepare and store its waste on site" prior to shipment to WIPP. (The only exception to this decision was the Sandia National Laboratory in New Mexico, which will ship its waste to the Los Alamos National Laboratory for disposal preparation and storage before disposal at WIPP.) DOE also noted that "in the future, the Department may decide to ship transuranic wastes from sites where it may be impractical to prepare them for disposal to sites where DOE has or will have the necessary capability," stating that "[t]ransportation of TRU waste would occur only in situations where the sites at which the waste is located lack the capability to prepare it for disposal." The WM PEIS ROD also stated that the sites that could receive TRU waste shipments from other sites were the Idaho National Laboratory (formerly known as the Idaho National Engineering and Environmental Laboratory), Oak Ridge National Laboratory, the SRS, and the Hanford Site, and that such decisions would be subject to appropriate review under NEPA.

In the WIPP SEIS-II, DOE analyzed the potential environmental impacts associated with disposing of TRU waste at WIPP. DOE's Proposed Action was to open WIPP and dispose of 175,600 cubic meters of defense TRU waste; this waste volume included 580 cubic meters of Battelle West Jefferson RH-TRU waste. In addition, DOE analyzed several action alternatives

that would consolidate waste from some smaller-quantity DOE sites at Oak Ridge National Laboratory, SRS, and Hanford.

In the *Savannah River Site Waste Management Final Environmental Impact Statement* (SRS WM EIS) (DOE 1995) DOE examined the environmental impacts of alternative strategies for managing various waste types (including TRU wastes) at SRS. In its initial ROD, DOE selected an alternative that included storage of TRU waste at SRS. In a subsequent ROD, DOE decided to construct and operate a TRU waste characterization/certification facility to characterize, repackage, and certify CH-TRU waste for disposal at WIPP.

The Battelle West Jefferson facility is privately owned; however, as part of the closeout of its nuclear materials research contract, DOE is assisting in the remediation of the site. Contract terms specify that all radioactive waste generated during the facility cleanup is "DOE-owned" for the purposes of disposal. The TRU waste must be shipped off-site by December 2005, to comply with Battelle's NRC license, which will expire at the end of 2005. Removal of the TRU waste from the Battelle West Jefferson site is required to allow site closure in fiscal year 2006. The Battelle West Jefferson TRU waste is not eligible for direct shipment to WIPP for disposal because the Battelle West Jefferson facility does not have the capability to certify the CH-TRU waste for disposal and WIPP is not yet authorized by the State of New Mexico to accept RH-TRU waste for disposal. Because the Battelle West Jefferson site is closing, developing the capability at that site to certify TRU waste for disposal is not cost-effective.

In an amended ROD pursuant to the WM PEIS (69 Fed. Reg. 39446, June 30, 2004), DOE decided to send the Battelle West Jefferson TRU waste to the Hanford site for storage and eventual shipment to WIPP. For the reasons described in DOE's Supplement Analysis (described in IV below) and in DOE's Notice of Availability of the Supplement Analysis (70 Fed. Reg. 53353, September 8, 2005), DOE has now decided to ship the waste to SRS or WCS for storage or characterization until the waste can be disposed of at WIPP.

II. Decision

DOE has decided to transfer approximately 37 cubic meters of CH and RH-TRU waste and up to 14 concrete shielding units (in 39 truck shipments) from the Battelle West Jefferson site to SRS and/or WCS. At SRS or WCS, the RH-TRU waste would be stored for a period not to exceed five years. At WCS, the CH-TRU waste would also be stored for up to five years. At SRS, the CH-TRU waste would be characterized under the existing SRS CH-TRU program and shipped to WIPP for disposal. DOE will ship a total of approximately 12 cubic meters of CH-TRU waste in TRUPACT-II shipping casks (up to two truck shipments) and approximately 25 cubic meters of RH-TRU waste in 10-160B and RH-TRU 72-B shipping casks (up to 14 truck shipments). Onsite activities will involve preparing the waste for shipment (loading the waste into the shipping casks and loading the trucks for transport).

If DOE's request for modification of the WIPP hazardous waste facility permit currently pending before the New Mexico Environment Department is granted without substantial change, DOE

may be able to ship the Battelle West Jefferson TRU waste from SRS or WCS to WIPP near Carlsbad, NM for disposal, without additional characterization. If additional characterization is necessary prior to disposal at WIPP, the Battelle West Jefferson TRU waste may be shipped from SRS or WCS to another DOE site for characterization. DOE has identified the Hanford Site, the Idaho National Laboratory, SRS (for waste stored at WCS) and the Oak Ridge National Laboratory as possible characterization sites for this waste. The decision regarding whether to ship the waste directly to WIPP or to another site for characterization will depend on the characterization requirements that are established as a result of DOE's pending Hazardous Waste Facility Permit modification request and the characterization capabilities that are available or planned at the individual sites at the time of any decision. Such a decision would be the subject to appropriate additional National Environmental Policy Act (NEPA) review if required.

III. Basis for the Decision

DOE needs to ship its TRU waste from the Battelle West Jefferson site for offsite storage prior to characterization for disposal at WIPP. However, this waste is not eligible for disposal at WIPP at this time, which results in the need to ship the waste to safe, secure storage until it can be shipped to WIPP. The Battelle West Jefferson site is a privately-owned site subject to regulation by the NRC. The NRC license expires in December 2005, and DOE has committed to close the site in Fiscal Year 2006. Continued storage would violate the current license issued by the NRC.

IV. Supplement Analysis

To determine whether the proposed action would warrant a supplement to the WM PEIS DOE prepared the *Supplement Analysis for Transportation, Storage, Characterization, and Disposal of Transuranic Waste Currently Stored at the Battelle West Jefferson Site near Columbus, Ohio* (DOE/EIS-0200-SA-02) (SA). DOE considered both the SRS and WCS as possible storage sites for the Battelle West Jefferson TRU waste. Each site has advantages. For example, the shorter transportation route between Battelle and SRS would mean waste removal from Battelle could be accomplished more quickly. Also, the CH-TRU waste could be characterized at SRS and sent to WIPP for disposal, thus minimizing the amount of waste that would have to be stored. WCS, on the other hand, is close to WIPP, and subsequent transportation to WIPP for disposal could have less impact if, under the permit modification to be issued by the State of New Mexico, the waste can eventually be shipped to WIPP without further characterization.

Preparation for Shipment. As discussed in the SA, it is expected that seven or eight workers would be involved in preparing the waste for shipment. Based on past experience with TRU waste handling at the Battelle West Jefferson site, DOE estimates that worker exposure would be less than 0.5 person-rem, a level that is equivalent to a risk of a latent cancer fatality of 2.5×10^{-4} . During this period, access to the Battelle West Jefferson site would be controlled, so there would be no exposure of the public to radiation.

If a TRU waste drop accident were to occur, DOE's analysis concluded that all radiation doses would be below 100 mrem per accident and external exposures from groundshine would be less than 1 mrem per hour. Total dose to the maximally exposed member of the public would be 4.2×10^{-2} rem, resulting in a risk of a latent cancer fatality of 2.5×10^{-5} . The accident with the

highest dose, a drop accident involving a drum of RH-TRU waste, had an estimated radiation dose of 8.5×10^{-2} rem. This is equivalent to a risk of a latent cancer fatality of 5.1×10^{-5} to the maximally exposed individual.

Transportation and Unloading. The total calculated fatalities from all shipments to either SRS or WCS are much less than one (3.5×10^{-3} for shipments to SRS and 5.0×10^{-3} for shipments to WCS). The transportation impacts would include those from the shipment of the Battelle West Jefferson TRU waste (up to 16 shipments), shipments of characterized CH-TRU waste from SRS to WIPP (up to 2 shipments) and the shipment of concrete shielding units in which the waste could be stored (up to 39 shipments). The radiation dose to workers as a result of unloading the waste at SRS or WCS would be less than 0.5 person-rem. This is the equivalent to the risk of a latent cancer fatality of 2.5×10^{-4} .

Storage of TRU waste. Based on the one year of experience with monitoring and maintenance of the TRU waste storage pad at the Battelle West Jefferson site, DOE estimates that routine exposures from monitoring, inspection and maintenance activities for TRU waste (stored in 14 concrete storage units, two RH-TRU 72-B casks, and in one drum in a locked cargo container) results in a total exposure of no more than 8×10^{-3} person-rem at the Battelle West Jefferson site annually. Assuming a 5-year storage period at SRS or WCS, the total worker exposure would be no more than 4×10^{-2} person-rem (8×10^{-3} person-rem for 5 years). This is equivalent to the risk of a latent cancer fatality of 2.0×10^{-5} . Radiation surveys at the Battelle West Jefferson site have verified that radiation exposures beyond the storage area would be at background levels, so the exposure to noninvolved workers and the general public at SRS or WCS would be zero.

The impacts to workers of a TRU waste accident during unloading or storage at SRS or WCS would be similar to the accident impacts for a waste container drop during loading at the Battelle West Jefferson site. The impacts to the MEI would be expected to be less than at the Battelle West Jefferson site because the MEI would be further away from the accident at SRS or WCS.

Characterization of CH-TRU waste – DOE estimates that worker exposure from characterizing the CH-TRU waste at SRS would be about 0.005 person-rem, which is the equivalent of a latent cancer risk of 2.5×10^{-6} for the involved workers. The impacts from characterizing RH-TRU waste at SRS would be about 0.03 person-rem which is the equivalent of a latent cancer risk of 1.5×10^{-5} for the involved workers. A characterization accident would be expected to result in an exposure of about 9.0×10^{-6} rem for the MEI, which is the equivalent of a latent cancer risk of 5.4×10^{-9} .

In the SA, DOE analyzed the health, environmental and transportation impacts of shipping the Battelle West Jefferson TRU waste to SRS or WCS. DOE concluded that the potential impacts identified would not exceed impacts reported in the WM PEIS or the WIPP SEIS-II. DOE published a Notice of Availability of the SA in the Federal Register on September 8, 2005 (70 Fed. Reg. 53353). DOE stated that it would issue an amended ROD no sooner than 30 days after publication of the Notice, and that it would consider public comments received during this period.

V. Response to Public Comments on the Supplement Analysis

DOE received two comments during the 30-day public notification of the availability of the SA, which commenced on September 8, 2005. One commenter objected to shipping the Battelle waste and storing it until it can “theoretically” be disposed of at a “potential future” WIPP site, citing concerns about “leaking valves” on casks used for transportation of wastes. The commenter stated that the safest way to treat radioactive waste is to leave the waste “in the ground where it is” rather than expose the public to risk by transporting the waste to another site.

DOE cannot leave the waste at Battelle since to do so would violate the NRC requirements for continued storage of this waste. The waste is currently in aboveground storage, rather than “in the ground” and poses some continuing risk to the surrounding population. The waste will be transported to another site in NRC approved TRU waste casks that are sealed to prevent leakage.

The WIPP site is an existing deep underground disposal site that is designed to isolate the waste from humans and the environment.

One commenter stated that DOE cannot choose WCS as a storage site for the Battelle West Jefferson waste. The commenter asserted that, because WCS was not included as an alternative in the WM PEIS and because DOE has not conducted an analysis of the environmental impacts of storage at the WCS site, DOE cannot choose WCS as a storage site without completing a supplemental WM PEIS that includes WCS as an alternative. The commenter also asserted that storage at WCS is inappropriate because WCS, as a non-DOE site, is unable to prepare the waste for shipment to WIPP, while SRS (and other DOE sites considered in the WM PEIS) could. The

commenter further asserted that the definition of interim storage contained in the WCS license would prevent storage of the Battelle West Jefferson Waste because the waste does not meet WIPP waste acceptance criteria. In addition, the commenter states that DOE should have considered Oak Ridge National Laboratory (ORNL) and Idaho National Laboratory (INL) as possible alternative storage sites for this waste and it should have provided a more extensive discussion of the alternative of continued onsite storage at the Battelle West Jefferson site.

Although the WM PEIS did not analyze waste management actions at commercial sites, DOE is not precluded from using such sites. Further, based on the conclusions in the SA, DOE does not believe that a supplemental EIS is needed.

There is no requirement that a site be a DOE site before a waste characterization program can be established at that site. The definition of interim storage does not prevent WCS from storing the Battelle West Jefferson waste. Under the definition cited by the commenter, the waste would have to be properly packaged and meet the waste acceptance criteria for "an authorized disposal facility, or an authorized federal agency." However, even if the waste does not meet the waste acceptance criteria for WIPP (the authorized disposal facility), the waste will meet the waste acceptance criteria for a DOE site (e.g. SRS) before it would be sent to WCS for storage. This would be sufficient to meet the definition of the WCS license.

The alternatives of sending the waste to ORNL or INL were considered in the WM PEIS and not chosen in the original Record of Decision. DOE is not reconsidering that decision at this time.

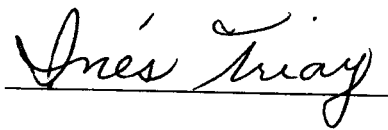
The alternative of continued storage at Battelle is unacceptable because NRC has indicated it will

not renew the Battelle license for this waste.

The SA reviewed the potential health and environmental impacts of the new proposed action as compared to those identified in the WM PEIS, the WIPP SEIS-II, and the SRS Waste Management EIS. The potential impacts of the proposed action are very small and would not add significantly to those previously reported.

DOE has determined, therefore, that the proposed actions would not, either under incident-free or accident conditions, present a substantial change relevant to environmental concerns or significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. Therefore, DOE determined that a supplemental EIS or a new EIS is not required under 40 CFR 1502.9(c) or 10 CFR 1021.314(c) to implement this proposal.

Issued in Washington, DC, this 12th day of October, 2005.

A handwritten signature in cursive script, reading "Inés Triay", is written over a horizontal line.

Dr. Inés R. Triay
Acting Assistant Secretary for
Environmental Management